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United States Department of Agriculture
Agricultural Research Administration
Bureau of Entomology and Plant Quarantine

A SIMPLE METHOD FOR REARING GREEN
JUNE BEETLE LARVAE

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Larvae of the green June beetle (Cotinis nitida (L.)) have recently become important pests of ladino clover in Virginia and other southeastern States. During the course of tests with insecticides at the Virginia Tidewater Field Station in 1952, a simple technique was developed for rearing these larvae. With this technique it was possible to observe closely the effects of different dosages of insecticide on all three larval instars. This rearing technique could be readily adapted to biological studies requiring detailed observations of larval activities and responses.

Collection and Incubation of Eggs

Field collections of adult beetles were made as the first step in obtaining eggs of similar age. The sexes could be distinguished rapidly and reliably in the field because the female has three prominent outer tibial spurs on the front legs and the male only two. One to three females and three to five males were placed in each cage, after which mating occurred.

The cages were large lantern globes fitted closely to the top of fire-clay pots 6 to 7 inches in diameter. The top of each globe was covered with cheesecloth. Each pot was filled with slightly moistened sandy soil. Ripening fruit such as blackberries, peaches, or sliced apples was supplied as food for the ovipositing beetles.

After oviposition the soil was removed from the pots and examined for eggs at intervals of 1 to 5 days, depending on the desired accuracy of oviposition data. The large, easily visible eggs were found distributed throughout more or less compact earthen balls.

These eggs were transferred individually for incubation to metal salve boxes, 2 inches in diameter, half full of slightly moistened sandy soil and covered with tight-fitting lids. From 20 to 25 eggs were placed in each box after it had been observed that under prolonged hunger one or two newly hatched larvae would devour many unhatched eggs. The

boxes containing the eggs were then placed on a concrete floor where the temperature remained at approximately 75-80° F. As soon as possible after hatching, the larvae were transferred to larger rearing containers. Throughout the rearing season the incubation period varied only slightly from 13 days.

Handling and Feeding Larvae

Larvae may be reared in different types and sizes of open containers suitable for holding moistened soil. In this method, boxes 17 inches square and 5 inches deep, with wooden sides 3/4 inch thick and bottoms of composition pressed wood, were partitioned into four equal compartments (fig. 1) with removable, interlocking strips of composition pressed wood. These compartments permitted close observations of the reactions of all three instars to different dosages of insecticides. Each compartment was filled with light sandy soil to a depth of 3 inches. A container could hold 60 to 100 first-instar, 30 to 40 second-instar, and 15 to 20 third-instar larvae until full-grown. Removing the partitions made it possible to use the entire box for rearing larger numbers of third-instars. All rearing was done in an out-of-door insectary.

The larvae were placed in the compartments and soon burrowed into the soil. After they had entered the soil, dehydrated alfalfa meal containing 15 percent of crude protein was sprinkled over the surface at intervals of 1 to 3 days depending upon how fast they consumed it. This food was not mixed with the soil but was moistened daily with a sprinkling can, usually late in the afternoon. This operation assisted in maintaining a favorable soil-moisture content. A saturated soil-moisture condition should be avoided.

Approximately 1,300 larvae were successfully reared by this method.

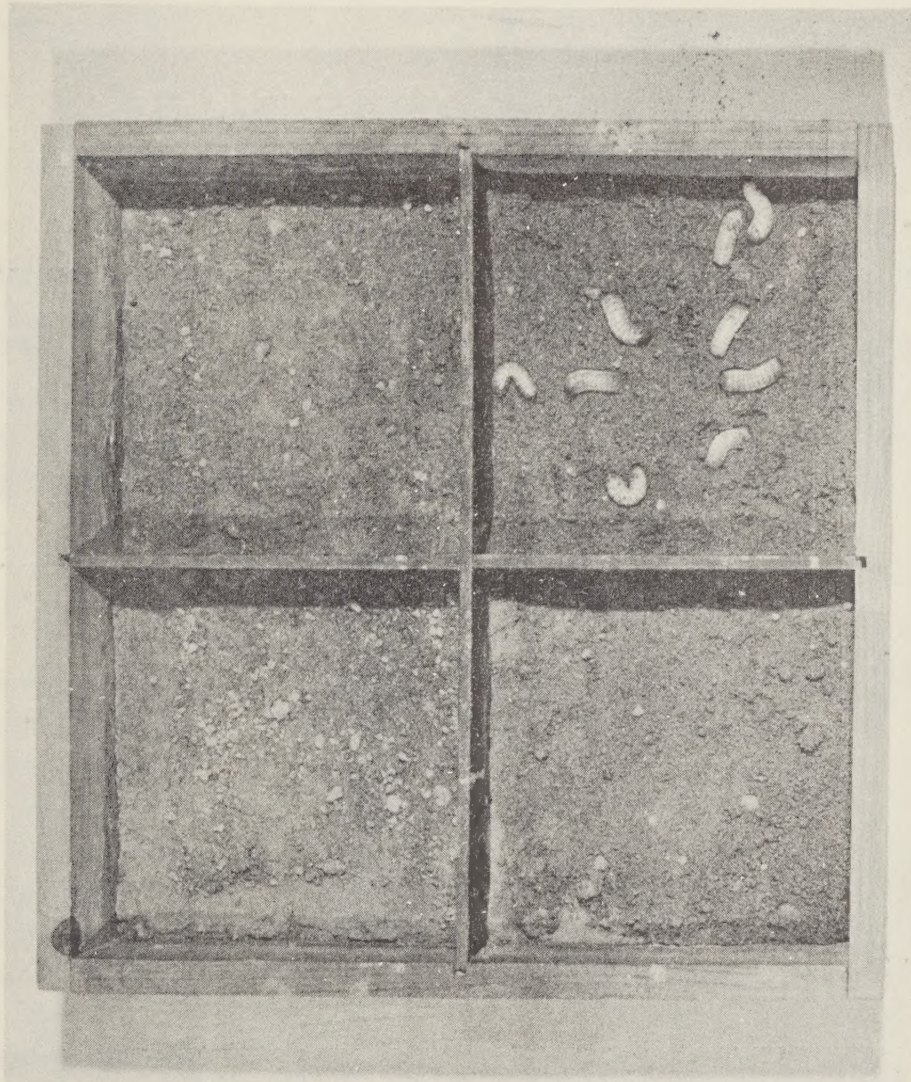


Figure 1.--Container for rearing green June beetle larvae, viewed from above.

